

REMARKS

Claims 1, 2, 6, 7 and 9-13 are all the claims pending in the application. All of these claims presently stand rejected.

Independent claims 2 and 7 have been amended to recite that the wafer is a feature of the claimed spin coating apparatus. Formerly independent claim 11 has been amended so that it depends from independent claim 2. Therefore, claims 2 and 7 are the only pending independent claims.

Claim Rejection Under 35 U.S.C. § 102

Claims 1, 2, 9, and 10 are rejected under 35 U.S.C. § 102(e) as being anticipated by Konishi et al. (6,012,585).

With respect to independent claim 2, Applicant respectfully traverses this rejection at least because Konishi does not disclose all of the recitations of the claimed spin coating apparatus. For example, Konishi does not disclose the claimed spin coating apparatus including a *spin chuck* with both a mount part and an extended projection part.

The Examiner asserts that the liquid receiving base 33 of Konishi's tray section 30, which retains a developing solution 10, corresponds to the recited "extended projection part" of the spin chuck.¹ However, the features of the tray section 30 cannot reasonably correspond to the recited spin chuck at least because the tray section 30 *does not spin*. As shown in FIG. 14C of Konishi,

¹ See Office Action dated December 12, 2007 at page 2.

the tray section 30 is lowered while only Konishi's *spin chuck* 2 spins.² Thus, one of ordinary skill would not consider tray section 30, which does not spin, to be a portion of the spin chuck.

Therefore, Applicant respectfully requests that the Examiner withdraw this rejection of independent claim 1, as well as those of dependent claims 1, 9, and 10 because of their dependency from independent claim 2.

Claim Rejections Under 35 U.S.C. § 103

Konishi in view of Emami

Claims 6, 7, 12 and 13 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Konishi et al. in view of Emami et al. (2003/0070695).

With respect to independent claim 7, Applicant respectfully traverses this rejection at least because Konishi does not disclose all of the recitations of the claimed spin coating apparatus. For example, as discussed above with respect to claim 2, Konishi does not disclose the claimed spin coating apparatus including a spin chuck with both a mount part and an extended projection part. Moreover, Emami, which the Examiner cites as showing a gas exhaust, does not cure the deficiencies in Konishi discussed above

Applicant also respectfully requests that the Examiner withdraw this rejection of dependent claims 6, 12, and 13 at least because of their dependency from one of independent claims 2 and 7.

² See Konishi at 8:30-38.

Kelly in View of Chu

Claims 1, 2, 9 and 10 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kelly et al. (5,294,257) in view of Chu (5,857,127). Claims 6, 7, 11, 12 and 13 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kelly and Chu in view of Emami.

Claims 2 and 7

With respect to independent claims 2 and 7, Applicant has amended these claims to recite that the wafer is a feature of the claimed spin coating apparatus. Applicant respectfully requests that the Examiner withdraw this rejection of these claims at least because the combination of Kelly and Chu would not reasonably teach or suggest the claimed spin coating apparatus including a wafer and a spin chuck comprising a mount part, for mounting the wafer thereon, and an extended projection part for facilitating formation of an edge-bead thereon; wherein the extended projection part of the spin chuck has a height lower than that of the wafer mounted on the mount part.

Kelly discloses an edge making spin tool designed to prevent the formation of an edge bead of photoresist from forming at the edge of a substrate, which can be a semiconductor wafer.³

In Kelly's first embodiment, a substrate 11 is mounted on a vacuum chuck 13 to which is fixed a frame 15 with a height substantially planer with the top surface of the substrate 11.⁴ An inflatable elastomer 17, with a height that is substantially planer with the top surface of the

³ See Kelly at 1:22-38.

⁴ See Kelly at FIGs. 1B & 2.

substrate, is provided between the frame 15 and the substrate 11.⁵ The substrate 11 is held in place by a vacuum.⁶

In Kelly's second embodiment, instead of the frame 15 and elastomer 17, a ring of elastomer 41 is used. The substrate 11 is provided on top of the elastomer ring 41 and a vacuum pulls the substrate 11 down, embedding the substrate 11 in the elastomer ring 41.⁷ As shown in FIG. 3B, the top surface of the substrate 11 is substantially planer to the top surface of the elastomer ring 41. Kelly and Chu discussed above.

The Examiner asserts that Kelly discloses all of the recitations of this claim except for the nozzle for depositing the photoresist. Therefore, the Examiner looks to the nozzle of Chu.

It is the Examiner position that Kelly's spin tool is *capable* of having a height that is lower than that of the substrate depending on the thickness of the substrate and the elasticity of the ring.⁸ However, amended claims 2 and 7 now recite the wafer as a *structural* feature of the invention. Accordingly, to support a rejection of *amended claims 2 and 7*, Kelly would have to disclose more than merely that the spin tools is capable of having a height lower than that of the substrate (i.e., wafer).

Applicant respectfully submits that there is no teaching or suggestion in Kelly for the elastomer to have a height that is lower than that of the wafer. Instead, the height of Kelly's elastomer must be substantially the same as the height of the wafer.

⁵ See Kelly at 3:61-66

⁶ See Kelly at 3:54-55.

⁷ See Kelly at 3:27-37; FIGs. 3A & 3B..

⁸ See Office Action at page 4, lines 1-4.

Accordingly, Applicant respectfully requests that the Examiner withdraw this rejection of independent claims 2 and 7.

Claims 1, 9 and 10

Moreover, Applicant respectfully requests that the Examiner withdraw the rejection of dependent claims 1, 9, and 10 at least because of their dependency from claim 2.

Dependent claims 1, 6, 11, 12, and 13

Finally, Applicant respectfully requests that the Examiner withdraw the rejection of dependent claims 1, 6, 11, 12, and 13, at least because of their dependency from claims 2 or claim 7, and because Emami, which the Examiner cites as showing a removable lift pins, does not cure the deficiencies in the combination of

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

AMENDMENT UNDER 37 C.F.R. § 1.116
U.S. Appln. No. 10/797,579

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

/John M. Bird/

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE

23373

CUSTOMER NUMBER

John M. Bird
Registration No. 46,027

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